

NANO-CERAMIC®

WWW.NANO-CERAMIC.COM INDUSTRIAL PROTECTIVE COATINGS



Industrial UVA Topcoat System

Precision Engineering for Functional Surfaces

UVA Topcoat is a high-performance coating system built for advanced OEM manufacturing. With a dry-film thickness of just 6–8 microns, it adds exceptional UV, chemical, and abrasion resistance—without impacting weight, tolerances, or design lines.

Compatible with glass, stainless steel, carbon fiber, coated metals, and organic composites, UVA Topcoat is ideal for components where both performance and surface integrity are critical.

Originally developed for aerospace and defense-grade resilience, it now supports emerging technologies in drone manufacturing, sensor systems, and advanced lightweight structures.

MaxHard LowFlex: Ultra-Thin, Ultra-Tough, Ultra Sleek

The MaxHard LowFlex configuration of UVA Topcoat is engineered for rigid components where durability, visual clarity, and protection under extreme conditions are essential.

- Dry Film Thickness: 6–8 microns
- Hardness: 9H (pencil scale)
- Flexibility: Low – for dimensionally stable materials

Ideal For:

- Military and surveillance drones
- Carbon-reinforced UAV airframes
- Optical and sensor glass panels
- Tactical-grade weapon surfaces
- High-end stainless or aluminum skins

Available in transparent, super-transparent tinted, or opaque RAL colors, UVA Topcoat enables camouflage coatings (e.g. sky-blue tones) and signature finishes—without weight

The Invisible Edge: Thin Film, Big Advantage

Traditional coatings are thick, brittle, and degrade under UV exposure. UVA Topcoat MaxHard LowFlex replaces them with a single ultra-thin, high-performance layer that protects while preserving original form and finish.

Key OEM Benefits:

UV-Stable Clarity - Hydrophobic & Easy to Clean - Chemical Resistance to Fuels, Acids, Solvents - Single-Layer Application - Works on Glass, Carbon, Stainless, and Composites
Built for environments where every micron matters—UVA Topcoat offers precision finish without compromise.

Cross-Material Bonding for Complex Assemblies

UVA Topcoat MaxHard LowFlex anchors securely to industrial substrates like:

- Glass & Transparent Polymers
- Carbon Fiber
- Steel, Stainless Steel & Aluminum
- Plastics & Polymer Composites
- PCB's Including solder points

Its ultra-thin build preserves tolerances and aesthetic precision across both rigid and advanced composite systems.

Lightweight Armor for Systems in Motion

Designed for airborne and mobile platforms:

- 6–8µm profile preserves mass balance
- Stealth-ready color options (e.g. sky-blue for drone invisibility)
- Abrasion and impact resistant
- Hydrophobic and anti-fouling
- Stable under temperature and UV stress
- Perfect for drones, weapon frames, optical gear, and carbon-built mobility platforms.

Protecting people, equipment, and the planet —all in one

UVA Topcoat is mission-ready and future-compliant:

- Non-PFAS formula
- Low VOC – Cleanroom-safe
- Food-contact safe (for high-touch surfaces)
- Reduced application complexity and waste

Visual Performance Without Optical Compromise

Ideal for stainless steel, glass and optics:

- Non-distorting clarity
- UV blocking, non-yellowing layer
- Hydrophobic and anti-smudge
- Super-transparent colors for functional camouflage

Reliable protection that lets optics and sensors perform at peak clarity.

Smart Aesthetics: From Stealth to Signature

UVA Topcoat adapts to visual design needs:

- Sky-tone or cloud-matching finishes for drones
- Translucent branding tints or solid RAL coverage
- Matte or gloss as required
- Always at 6–8 microns for zero tolerance disruption

Built-In Efficiency for Manufacturing and Assembly

- Self-leveling for smooth, even coverage
- Spray or roll or wipe application
- Dust-resistant surface cure
- Fast handling and UV curing compatibility
- Robotic and automated line ready

Engineered to match the pace and precision of modern OEM lines.

The Invisible Barrier. Protection Without Presence

Delivers maximum resilience with minimal footprint:

- No bulk, no added form
- Maintains tolerances and design edges
- Invisible defense against UV, chemicals, and abrasion

You don't see it—but it works harder than anything else on the surface.

Field-Tested Performance. Lab-Verified Durability.

- H9 surface hardness
- 6–8 micron thickness
- UV resistance: 1000+ hrs exposure, no yellowing
- Cross-material adhesion
- Chemical resistance: HF, HCl, ethanol, citric acid
- Stable through thermal cycling and abrasion tests

Validated in the lab. Proven in the field.

Formulated to Solve What Others Can't

UVA Topcoat is engineered to overcome the traditional weaknesses of standard dielectric and surface coatings, offering a fine-tuned balance of adhesion, durability, and electrical insulation.

Integrated Performance Highlights

Built-in flexibility and toughness to prevent cracking under stress
Stable adhesion to glass, metal, composite, and electronic surfaces
UV-blocking capability for outdoor or exposed electronics
Excellent surface hardness with mechanical resilience

Dielectric Strength:

Estimated at ~20–24 kV/mm, UVA Topcoat forms a dependable insulating barrier ideal for printed circuit boards and other sensitive components requiring moisture resistance and electrical separation.

The Result:

High dielectric protection in thin-layer format
Visual transparency or stealth-oriented coloration
Reliable adhesion under flex, UV, or chemical exposure
Ultra-thin weight-saving coating for UAVs, optics, electronics, and weapon-grade components

This isn't just a coating—it's an engineered surface technology for the industries defining the next decade.

Freedom in Protection Years

Long-Lasting Protection, Layer by Layer

A single 6 µm (micron) layer applied using HVLP spray technology can provide up to 8 years of protection. Need more durability? Just add more layers—it's that simple.

Apply wet-on-wet: once the first coat flashes off (dry to the touch but still tacky), you can immediately apply the next. This method prevents trapped gases and creates a seamless, chemical-resistant film with hydrophobic properties—making surfaces easier to clean and maintain.

Coverage & Application Efficiency

UVA Topcoat is engineered for maximum efficiency with minimal material use—delivering high-performance protection at a fraction of the volume required by traditional coatings.

Recommended usage:

12.5 ml/m² per layer (wipe or spray), achieving a film thickness of approximately 6 microns

Coverage per liter:

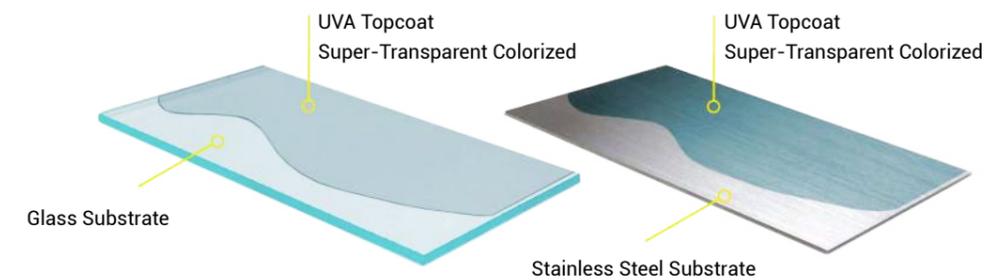
Redefining the Limits: Color for Ultra-Thin Protection

Blending NANO-CERAMIC® Super Transparent Colorants into our UVA Topcoat creates vibrant, transparent finishes that offer both striking visual appeal and advanced surface protection. These super-transparent colorants are specifically formulated to deliver clear, halogen-free color effects—ideal for applications where the underlying surface, such as glass or metallic layers, should remain visible. Unlike traditional opaque pigments used for solid-color coatings, this formulation maintains clarity while adding durable color.

This advanced coating system is ideal for architectural glass, wall partitions, furniture components, signage, and display surfaces—transforming everyday glass into design-driven, functional elements. The system supports a wide range of RAL-based shades, allowing for delicate, precise tinting of the topcoat layer without compromising its film integrity or transparency. This makes it possible to design with color while maintaining clarity, thinness, and technical performance—especially important in modern interior and exterior applications.

These pigment dispersions offer extremely low VOC contribution, outstanding dispersion behavior, excellent thermal and UV stability, and high scratch resistance—making them the perfect choice for high-performance ultra-thin or effect-driven coating systems.

When applied to glass, the combination of colorants and UVA Topcoat not only provides subtle, elegant color but also enhances functionality. The surface gains long-term scratch resistance, chemical durability, and hydrophobic properties that make it easier to clean and maintain.



New Potential through Transparency and Color Strength

This advanced hybrid coating system—combining UVA Topcoat, with the NANO-CERAMIC® Super Transparent Colorants—enables a wide range of high-value creative and industrial applications, especially where clarity, durability, and refined aesthetics are required.

In architectural and interior design, the coating can be applied to glass walls and partitions to create lightly tinted, UV- and scratch-resistant privacy panels that enhance modern office and hospitality spaces. Tempered glass backsplashes in kitchens gain soft transparent hues that are heat- and stain-resistant and easy to clean.

Shower enclosures benefit from anti-fingerprint, water-repellent, and chemical-resistant properties, along with a soft decorative tint. Lighting diffusers and panels are enhanced with UV-stable translucent coatings that reduce glare and soften illumination.

Sinks and bathtubs made of porcelain or melamine can be coated with a translucent layer over white, creating remarkable effects.

On balconies and staircases, tinted coatings are applied directly to the glass balustrades and steps, adding both durability and visual appeal.

For furniture and product design, the coating creates a refined, lightly tinted finish on cabinet doors, especially glass inserts. Tables used in dining or conference settings gain scratch-resistant, easy-clean surfaces in modern tones. Frosted or semi-gloss finishes on floating shelves and sliding glass doors elevate minimalist design with subtle color.

Glass facades can be retrofitted by light sanding and applying our exterior UVA topcoat. This process gives tall buildings a modern look, while the windows repel water, dirt, and block solar heat before it reaches the glass.

It also integrates seamlessly with switchable glass and LC/PDLC panels, adding both surface protection and color flexibility. Signage and display panels benefit from clean, consistent finishes, ideal for branding and backlit applications.

Expanding Beyond Glass: Solutions for Stainless Steel

The advanced hybrid coating system also performs exceptionally well on stainless steel and other metal surfaces, offering not only functional protection but also a refined visual finish. When applied as an ultra-thin layer, the coating enhances surface durability while preserving the material's natural texture and reflectivity.

It significantly improves scratch resistance, reduces fingerprint visibility, and increases chemical and corrosion resistance—making stainless steel easier to maintain in both private and public environments.

By incorporating NANO-CERAMIC® Super Transparent Colorants, the coating can introduce elegant color tones such as warm gray, smoke, champagne, or bronze. These subtle tints provide a modern, high-end appearance without obscuring the metal's surface quality. The result is a finish that looks sophisticated yet remains highly functional under daily use.

This makes the system ideal for applications in interior architecture, appliance surfaces, kitchen and bathroom fixtures, elevator panels. It adheres well to stainless steel or aluminium and retains transparency and performance even at film thicknesses below 15 microns. With this combination of durability and design flexibility, the coating extends its value far beyond glass into high-touch, high-visibility metal environments.

Multi-Talent in Application

UVA Topcoat isn't just versatile in where it's used—but also in how it's applied. Its advanced leveling and viscosity make it easy to apply using tools you already have.

Application Options (Examples):

- Countertops & Tables: Wipe on with cotton pads or spunbond wipes.
- Walls (Interior/Exterior): Roll on with ¼" (6 mm) short-nap microfiber roller.
- Metal Panels & Large Surfaces: Spray on with any system (HVLP recommended).



Optimal Spray Application with HVLP

For best results and minimal waste, HVLP (High Volume Low Pressure) spray guns are recommended.

Transfer efficiency: HVLP: 60–90%, Conventional air spray: 25–40%

Why HVLP?

- Significantly reduces overspray
- Less risk of air contamination (air spray gun carries this risk).
- Lowers material waste
- More cost-effective and environmentally friendly
- Ensures uniform film build with superior leveling

Working pressure: ca. 2 – 3 bar

Nozzles: 0.8 – 1.3 mm 0.03-0.05"

By combining precision application with ultra-low film thickness, UVA Topcoat sets a new standard for coating efficiency—without compromising durability or performance.

Direct to Substrate "Examples"



WEAPONARY



ROBOTICS



STAINLESS



PCB'S



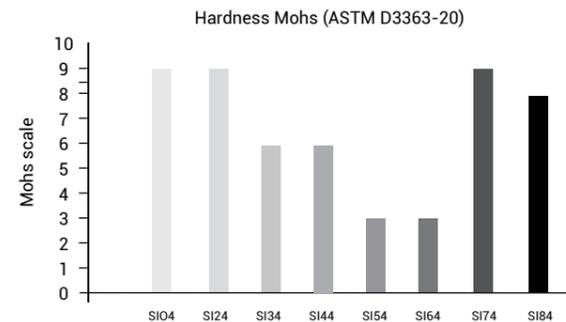
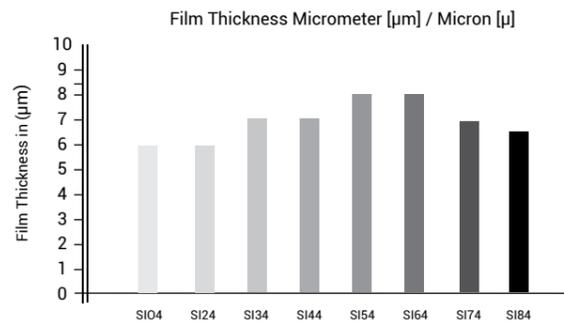
DRONES



GLASS

Superb adhesion on virtually any substrate

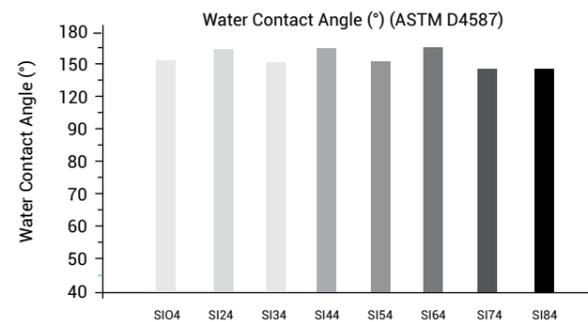
Substrate	Suitability	Substrate	Application Suitability
Concrete / Cement / Plaster	Excellent	Plexiglass	Excellent
Fibre Cement Boards	Excellent	Plastics	Excellent
Gypsum Boards	Excellent	Aluminium	Excellent
Brick / Masonry	Excellent	Tarpaulin (PVC)	Excellent
Acrylic Latex (Water-Based)	Excellent	Epoxy (2K)	Excellent
Acrylic / Emulsion Paint	Excellent	Elastomeric Paint (Aqua Proof)	Good (sand first)
Steel / Zinc	Excellent	Mild Steel (Clean or Light Rust)	Good (sand first)
Marble / Ceramics	Excellent	Polyurethane PU (2K)	Good (with rust convertor)
Glass	Excellent	Alkyd (Solvent based)	Fair (sand first)



Quality Comparison of paints technologies

In case written in bold font it means existing shortcomings in quality.

Characteristics	Acrylic Latex walls ceilings	Acrylic walls floors	Epoxy floors	Polyurethane waterproofing	UVA Topc all surfaces
Primer	Yes	Yes	Yes	Yes	No
Adhesion Strength	Poor	Poor	Poor	Poor	Excellent
Cross Cut Test	Poor	Poor	Good	Poor	Excellent
Abrasion Resistance	Poor	Poor	Average	Poor	Excellent
UV Radiation Resistance	Average	Average	Poor	Good	Excellent
Artificial Atmospheric Agents	Poor	Poor	Good	Good	Excellent
Colour Retention	Average	Average	Poor	Poor	Excellent
Gloss Retention	Poor	Poor	Poor	Poor	Excellent
Chemical Resistance	Good	Good	Good	Poor	Excellent
Severe Chemical Attack	Poor	Poor	Average	Poor	Excellent
Temperature Resistance	60°C	91°C	177°C	263°C	300°C
Thermal Shock Resistance	Good	Good	Poor	Good	Excellent
Carbon Dioxide Permeability	Poor	Poor	Good	Poor	Excellent
Permeability water vapour	Average	Average	Good	Average	Excellent
Water Absorption Rate	5-15%	1%	2%	3%	0%
Aging at 70°C	Poor	Poor	Good	Average	Excellent
Adhesion Strength Pull-off	Poor	Average	Good	Poor	Excellent
Impact Resistance	Poor	Average	Good	Poor	Excellent
Anti-Graffiti	No	No	No	No	Yes
Anti-Termite (Wood)	No	No	No	No	Yes
Hydrophobic Self Cleaning	No	No	No	No	Yes
Easy to Clean	No	No	No	No	Yes
Total Solar Reflectance (TSR)	60 (white)	60 (white)	60 (white)	60 (white)	88 (white)
Expected Lifetime in Years	<7	<7	<5-15	<5-15	8/16/24



SIO4

1-Component (1K)

9H UVA Topcoat Transparent for glossy surfaces

Article Nr	: SIO41LUVA 1L / 920 g SIO405UVA 500 ml / 460 g
Consumption	: 3 layers +/- 34.6 g/m ² - 37.5 ml/m ² 18 micron = 20 m ²
Reachable area	: 2 layers +/- 23.0 g/m ² - 25.0 ml/m ² 12 micron = 40 m ² : 1 layer +/- 11.5 g/m ² - 12.5 ml/m ² 6 micron = 80 m ²
Hardness/Cupping	: H9 / Flexibility ISO 1520 >21mm
Used for	: The system can be applied directly or indirectly on all kind of non porous surfaces, we refer to page 4 of this brochure for a detailed overview
Application area	: Buildings, airports, offshore structures, bridges, tunnels, hotels, private housing, interior design etc.

SIO4 is an incredibly strong 1-component high performance coating and paint system which forms a durable matrix of molecular bonds (transformation to ceramic) resulting in permanent protection of the surface.

Three simple steps: Clean, Dry, and Apply.

- Easily repels water, dirt, dust, and pollutants.
- This coating is permanent hydrophobic
- Restores damaged finishes and reduces cleaning intervals.
- Resistant to all kinds of chemicals and UV radiation.
- Superior anti-pollution and anti-corrosion properties.
- This coating can withstand temperatures of 300°C
- Superb adhesion even on glass or stainless steel.
- Can be sprayed multilayered.
- Transparent, Opaque, solid-color or vibrant, transparent color finishes.

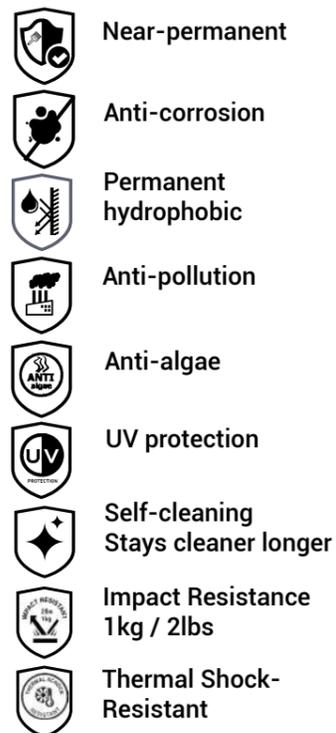
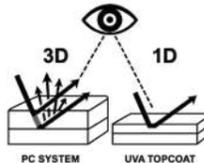
Expected life duration 8-16 or 24 Years (layer thickness)



How to use: Page 16-19



How does it look visually?



SI24

1-Component (1K)

9H UVA Topcoat Transparent for matte surfaces

Article Nr	: SI241LUVA 1L / 920 g SI2405UVA 500 ml / 460 g
Consumption	: 3 layers +/- 34.6 g/m ² - 37.5 ml/m ² 18 micron = 20 m ²
Reachable area	: 2 layers +/- 23.0 g/m ² - 25.0 ml/m ² 12 micron = 40 m ² : 1 layer +/- 11.5 g/m ² - 12.5 ml/m ² 6 micron = 80 m ²
Hardness/Cupping	: H9 / Flexibility ISO 1520 >21mm
Used for	: The system can be applied directly or indirectly on all kind of non porous surfaces, we refer to page 4 of this brochure for a detailed overview
Application area	: Buildings, airports, offshore structures, bridges, tunnels, hotels, private housing, interior design etc.

SI24 is an incredibly strong 1-component high performance coating and paint system which forms a durable matrix of molecular bonds (transformation to ceramic) resulting in permanent protection of the surface.

Three simple steps: Clean, Dry, and Apply.

- Easily repels water, dirt, dust, and pollutants.
- This coating is permanent hydrophobic
- Restores damaged finishes and reduces cleaning intervals.
- Resistant to all kinds of chemicals and UV radiation.
- Superior anti-pollution and anti-corrosion properties.
- This coating can withstand temperatures of 300°C
- Superb adhesion even on glass or stainless steel.
- Can be sprayed multilayered.
- Transparent, Opaque, solid-color or vibrant, transparent color finishes.

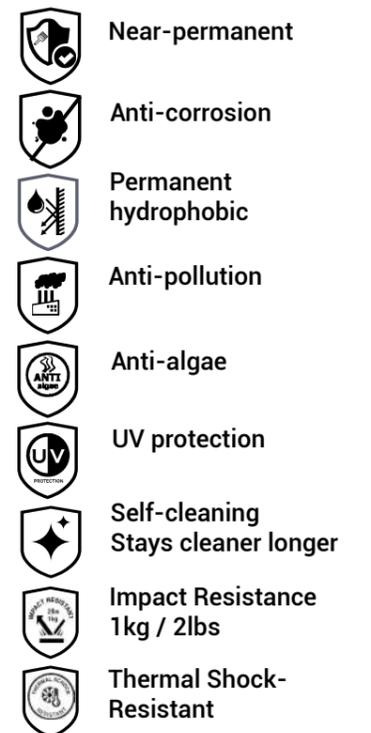
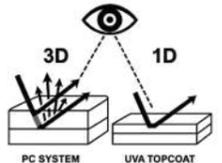
Expected life duration 8-16 or 24 Years (layer thickness)



How to use: Page 16-19



How does it look visually?



SI34

1-Component (1K)

H6 UVA Topcoat Transparent for glossy surfaces

Article Nr	: SI341LUVA 1 L / 920 g SI3405UVA 500 ml / 460 g
Consumption	: 3 layers +/- 34.6 g/m ² - 37.5 ml/m ² 18 micron = 20 m ²
Reachable area	: 2 layers +/- 23.0 g/m ² - 25.0 ml/m ² 12 micron = 40 m ² : 1 layer +/- 11.5 g/m ² - 12.5 ml/m ² 6 micron = 80 m ²
Hardness/Cupping	: H6 / Flexibility ISO 1520 >24mm
Used for	: The system can be applied directly or indirectly on all kind of non porous surfaces, we refer to page 4 of this brochure for a detailed overview
Application area	: Buildings, airports, offshore structures, bridges, tunnels, hotels, private housing, interior design, PCB's, etc.

SI34 is an incredibly strong 1-component high performance coating and paint system which forms a durable matrix of molecular bonds (transformation to ceramic) resulting in permanent protection of the surface.

Three simple steps: Clean, Dry, and Apply.

- Easily repels water, dirt, dust, and pollutants.
- This coating is permanent hydrophobic
- Restores damaged finishes and reduces cleaning intervals.
- Resistant to all kinds of chemicals and UV radiation.
- Superior anti-pollution and anti-corrosion properties.
- This coating can withstand temperatures of 300°C
- Superb adhesion even on glass.
- Superb adhesion even on glass or stainless steel.
- Transparent, Opaque, solid-color or vibrant, transparent color finishes.

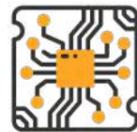
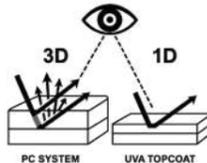
Expected life duration 8-16 or 24 Years (layer thickness)



How to use: Page 39



How does it look visually?



DIELECTRIC



Near-permanent



Anti-corrosion



Permanent hydrophobic



Anti-pollution



Anti-algae



UV protection



Self-cleaning
Stays cleaner longer



Impact Resistance
1 kg / 80 cm



Thermal Shock-Resistant

SI44

1-Component (1K)

H6 UVA Topcoat Transparent for matte surfaces

Article Nr	: SI441LUVA 1 L / 970 g SI4405UVA 500 ml / 485 g
Consumption	: 3 layers +/- 34.6 g/m ² - 37.5 ml/m ² 18 micron = 20 m ²
Reachable area	: 2 layers +/- 23.0 g/m ² - 25.0 ml/m ² 12 micron = 40 m ² : 1 layer +/- 11.5 g/m ² - 12.5 ml/m ² 6 micron = 80 m ²
Hardness/Cupping	: H6 / Flexibility ISO 1520 >24mm
Used for	: The system can be applied directly or indirectly on all kind of non porous surfaces, we refer to page 4 of this brochure for a detailed overview
Application area	: Buildings, airports, offshore structures, bridges, tunnels, hotels, private housing, interior design etc.

SI44 is an incredibly strong 1-component high performance coating and paint system which forms a durable matrix of molecular bonds (transformation to ceramic) resulting in permanent protection of the surface.

Three simple steps: Clean, Dry, and Apply.

- Easily repels water, dirt, dust, and pollutants.
- This coating is permanent hydrophobic
- Restores damaged finishes and reduces cleaning intervals.
- Resistant to all kinds of chemicals and UV radiation.
- Superior anti-pollution and anti-corrosion properties.
- This coating can withstand temperatures of 300°C
- Superb adhesion even on porcelain, glass or stainless steel.
- Can be sprayed multilayered.
- Transparent, Opaque, solid-color or vibrant, transparent color finishes.

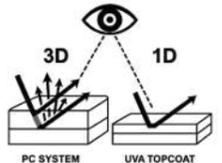
Expected life duration 8-16 or 24 Years (layer thickness)



How to use: Page 39



How does it look visually?



Near-permanent



Anti-corrosion



Permanent hydrophobic



Anti-pollution



Anti-algae



UV protection



Self-cleaning
Stays cleaner longer



Impact Resistance
1 kg / 80 cm



Thermal Shock-Resistant

SI54

1-Component (1K)

H3 UVA Topcoat Transparent for glossy surfaces

Article Nr	: SI541LUVA 1 L / 920 g SI5405UVA 500 ml / 460 gr
Consumption	: 3 layers +/- 34.6 g/m ² - 37.5 ml/m ² 18 micron = 20 m ²
Reachable area	: 2 layers +/- 23.0 g/m ² - 25.0 ml/m ² 12 micron = 40 m ² : 1 layer +/- 11.5 g/m ² - 12.5 ml/m ² 6 micron = 80 m ²
Hardness/Cupping	: H3 / Flexibility ISO 1520 >26mm
Used for	: The system can be applied directly or indirectly on all kind of non porous surfaces, we refer to page 4 of this brochure for a detailed overview
Application area	: Buildings, airports, offshore structures, bridges, tunnels, hotels, private housing, interior design etc.

SI54 is an incredibly strong 1-component high performance coating and paint system which forms a durable matrix of molecular bonds (transformation to ceramic) resulting in permanent protection of the surface.

Three simple steps: Clean, Dry, and Apply.

- Easily repels water, dirt, dust, and pollutants.
- This coating is permanent hydrophobic
- Restores damaged finishes and reduces cleaning intervals.
- Resistant to all kinds of chemicals and UV radiation.
- Superior anti-pollution and anti-corrosion properties.
- This coating can withstand temperatures of 300°C
- Superb adhesion even on epoxy or PU
- Can be sprayed multilayered.
- Transparent, Opaque, solid-color or vibrant, transparent color finishes.

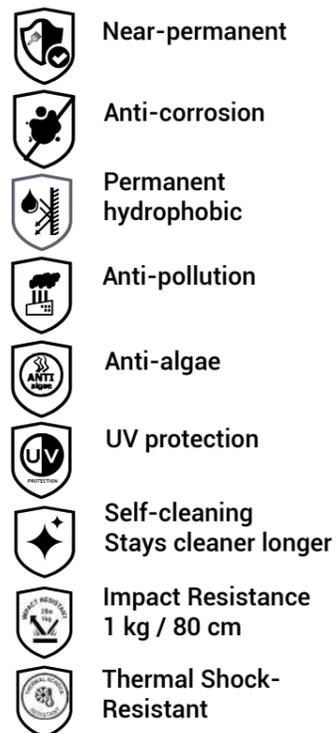
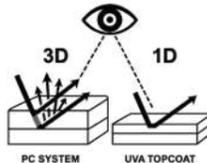
Expected life duration 8-16 or 24 Years (layer thickness)



How to use: Page 39



How does it look visually?



SI64

1-Component (1K)

H3 UVA Topcoat Transparent for matte surfaces

Article Nr	: SI641LUVA 1 L / 970 g SI6405UVA 500 ml / 485 g
Consumption	: 3 layers +/- 34.6 g/m ² - 37.5 ml/m ² 18 micron = 20 m ²
Reachable area	: 2 layers +/- 23.0 g/m ² - 25.0 ml/m ² 12 micron = 40 m ² : 1 layer +/- 11.5 g/m ² - 12.5 ml/m ² 6 micron = 80 m ²
Hardness/Cupping	: H3 / Flexibility ISO 1520 >26mm
Used for	: The system can be applied directly or indirectly on all kind of non porous surfaces, we refer to page 4 of this brochure for a detailed overview
Application area	: Buildings, airports, offshore structures, bridges, tunnels, hotels, private housing, interior design etc.

SI64 is an incredibly strong 1-component high performance coating and paint system which forms a durable matrix of molecular bonds (transformation to ceramic) resulting in permanent protection of the surface. SI64 is the perfect substitute for PTFE-coated fiberglass, ETFE foils, and membranes that contain PFAS.

Three simple steps: Clean, Dry, and Apply.

- Easily repels water, dirt, dust, and pollutants.
- This coating is permanent hydrophobic
- Restores damaged finishes and reduces cleaning intervals.
- Resistant to all kinds of chemicals and UV radiation.
- Superior anti-pollution and anti-corrosion properties.
- This coating can withstand temperatures of 300°C
- Superb adhesion even on glass or stainless steel.
- Can be sprayed multilayered.
- Transparent, Opaque, solid-color or vibrant, transparent color finishes.

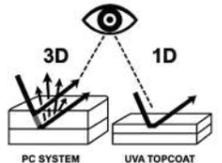
Expected life duration 8-16 or 24 Years (layer thickness)



How to use: Page 39



How does it look visually?



UVA Topcoat Colorants

Precision Color Control – From Super-Transparent Tints to Bold, Defined Shades

As a coating manufacturer, we use advanced colorant chip technology to produce fully prepared, ready-to-use colorants that integrate seamlessly into our coating systems.

The colorant chips themselves are selected, processed, and blended by us under controlled conditions, resulting in liquid colorants with precise concentration, high transparency, and excellent stability. Our customers receive a finished colorant product and do not need to handle or process chips in any way.

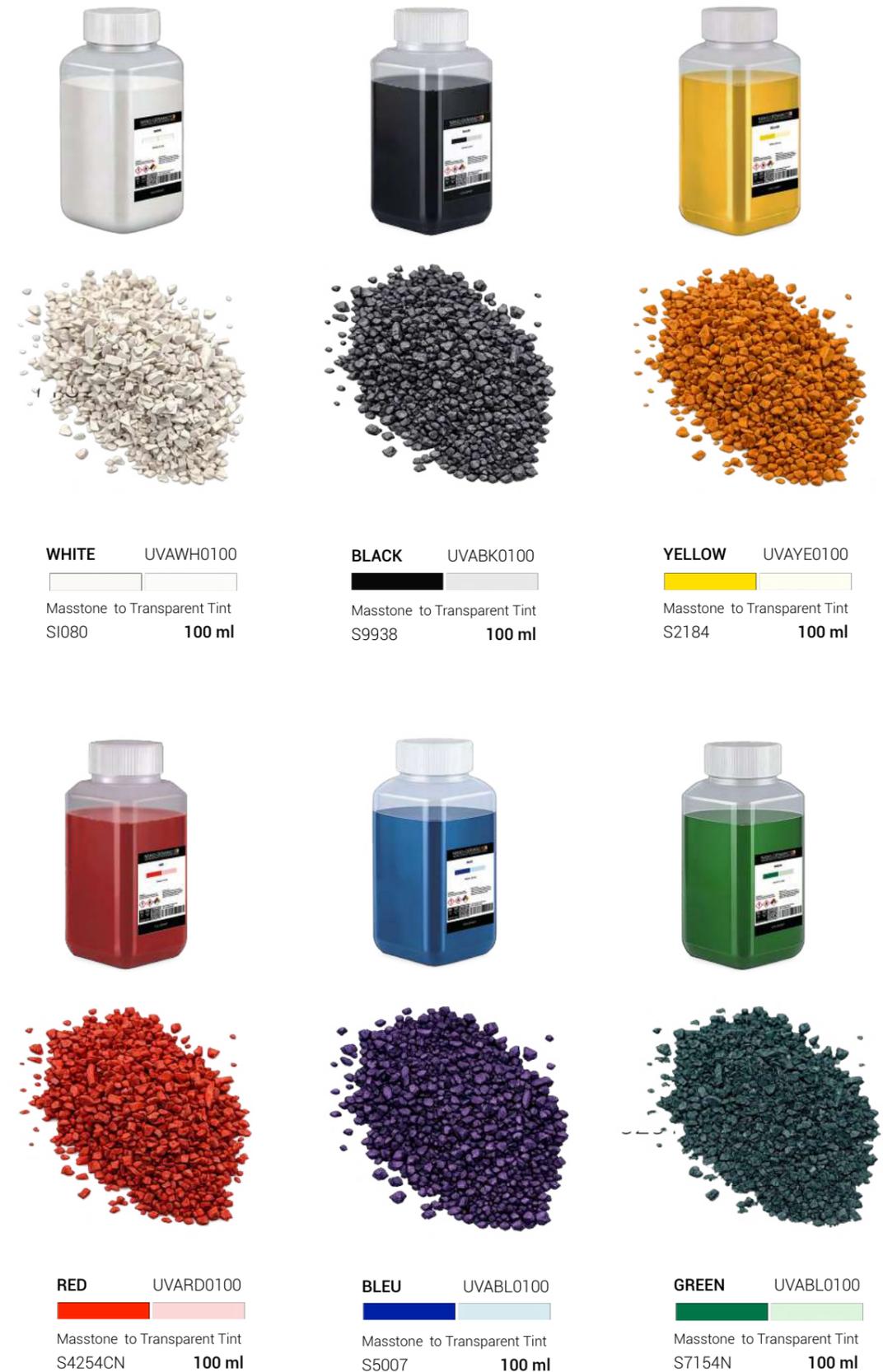
Because the colorants are supplied ready to use, incorporation into our coating systems is simple and straightforward. The required amount of colorant can be added directly to the coating and mixed using standard stirring or mechanical mixing.

The colorant disperses quickly and evenly, without streaking, cloudiness, or the need for special equipment. This makes color adjustment easy and reliable, even for small batches or on-site applications.

By controlling the entire process—from coating and colorant chip selection to finished colorant production—we ensure consistent color accuracy and repeatability from batch to batch.

The colorants are specifically engineered to remain fully compatible with our high-performance binder technologies. As a result, color can be introduced without compromising transparency, gloss, durability, or chemical resistance.

The outcome is a coating system in which professional color control—from super-transparent shades to bold finishes—is achieved with minimal effort for the user: add the colorant, mix, and apply.



General Application Overview (All Substrates)

Tools & Equipment:

HVLP spray gun (nozzle 1.0–1.3 mm / 0.03–0.05"), Air pressure: 2–3 bar (20–30 psi).
Tools: microfiber roller, cotton pad (for flat or small surfaces) Paint filter (190–250 µm)

Working Environment:

Ambient temperature: 5–30°C, Humidity: Below 65%
Protective gear: Paint suit, nitrile gloves, and a respirator mask with proper filters

Respirator Guidance:

Although UVA Topcoat is a Low-VOC formulation and can generally be applied in well-ventilated areas using standard respirator masks (with organic vapor filters), we recommend the following for optimal safety:

For maximum protection, especially in enclosed or poorly ventilated environments, a fresh-air-supplied respirator mask ensures that all potential inhalation risks are fully eliminated. This approach is especially advisable during prolonged spraying sessions or when applying large surface areas indoors.

Curing Environment: Avoid direct sunlight, wind, rain during application.

Optional Additives : RETA (Retarder): Slows down flash time between layers.
ACCL (Accelerator): Speeds up curing; use at 0.2–0.4% max.

For Steel / Weaponary

Surface Preparation:

Sandblasting (recommended): Roughen and clean the surface from old coatings and rust.
Solvent Clean: Wipe with acetone to remove oils and particles.
Tack Cloth Wipe: Final dust removal.
Optional Prebake: Oven dry at 60–80°C for 15–20 minutes to eliminate moisture (especially if stored long or porous).

Application:

Spray coat 1: Thin, even layer.
Flash-off time: 5 minutes or until bubbling (outgassing) stops.
Spray coat 2 (optional for durability): After coat 1 flashes off.

Curing Options:

Ambient Cure:

Tough dry: 5 minutes, Hard dry: 2 hours, 85% cured: 12 hours, Fully cured: 5 days at room temperature 20–25°C.

IR Curing (Medium Wave):

Temperature: 60–80°C
Exposure: 20 minutes per panel
Polishable: After 4–6 hours

Oven Curing (if available):

Temperature: 60–80°C
Duration: 30–60 minutes depending on part mass and material.

Alternative Heat Curing Without an Oven:

Use infrared (IR) lamps or heat guns
Maintain surface temperature at 60–80°C
Hold temperature for approximately 20 minutes per panel

Why Heat Curing Strengthens the Coating Matrix:

Heat curing accelerates the cross-linking reaction in the coating's siloxane and alkoxide network. This forms a denser, more uniform ceramic-like molecular matrix, resulting in: Improved chemical and UV resistance. Higher hardness (up to H9). Long-term durability.

In short: Heat transforms the coating from a soft film into a tough, tightly bonded ceramic barrier — especially critical on steel to withstand mechanical and thermal stresses.

Spraying Technique (For Glass, Porcelain, Stainless)

Achieve a uniform, streak-free coating without runs, orange peel, or gloss variation — especially on non-absorbent vertical surfaces like glass.

1. Spray Gun Setup

- Air cap and nozzle: Fine atomization with a full, wide fan pattern
- Fluid flow: Limited — just a light mist, not a heavy coat
- Air pressure:
- HVLP: ~1.5 bar at the cap
- Conventional: ~2.5 bar at gun inlet

Goal: a thin, even coat that wets the surface uniformly without flooding or overspray.

2. Spraying Technique

- Apply with smooth, steady passes, overlapping each stroke by ~50%
- Maintain a consistent distance of 15–20 cm and a steady speed (~30 cm/sec)
- Begin spraying before reaching the surface and release the trigger after passing it – never stop directly on the panel

3. Common Issues and How to Avoid Them

Issue	Likely Cause	Solution
Runs or sags	Excessive thickness	Reduce material flow, increase distance
Orange peel	Too dry or poor atomization	Add retarder, adjust distance and pressure
Gloss variation	Uneven thickness	Keep passes and overlap consistent

4. Lighting and Visual Control

- Use cross-lighting (light from the side) to inspect the coating during application
- View the panel from a low angle to detect surface texture or unevenness
- For glass panels: backlighting helps identify thin spots immediately

5. Surface Temperature

- Ensure the surface does not exceed 30 °C during application
(Hot surfaces cause solvent to flash off too fast, reducing flow and leveling)

6. Use of Retarder (If Needed)

Add 5–10% retarder if:

- The climate is hot or dry
- You're working on large or vertical surfaces
- The substrate is very smooth and non-absorbent (glass, metal, enameled ceramic)

Retarder extends open time, allowing the film to level out naturally before curing, resulting in a smoother, more even finish.

7. Spray Angle Guidance – Glass Application

Regardless of how the glass is positioned, always keep the spray gun perpendicular (90°) to the surface to ensure an even layer.

If the glass is laid horizontally (flat):

- Hold the spray gun directly above the surface, pointing straight down
- Keep the spray fan horizontal (left to right)
- Move the gun side to side with 50% overlap

If the glass is vertical (e.g. against a wall):

- Stand in front of the panel
- Hold the spray gun straight toward the surface, not at an angle
- The spray fan remains horizontal
- Move the gun top to bottom, keeping distance and speed consistent

Important: Spraying at an angle can cause uneven film thickness, overspray fog, or visible streaks – always stay perpendicular to the surface.

Final Checklist for Glass Application

- Mist-like spray pattern – not heavy
- Constant speed, 15–20 cm distance, 50% overlap
- Avoid hot surfaces and direct sunlight
- Use side-lighting or back-lighting for inspection
- Add 5–10% retarder when needed
- Spray perpendicular to the surface, horizontal or vertical
- Apply multiple light coats – never one thick coat

For Glass

Surface Prep:

Clean with glass cleaner.

Wipe with acetone.

Use tack cloth.

Optional: Sanding for heavily polluted facades.

For etched deposits or old buildup, you may wet-sand with 1500–2000 grit pads.

Always sand gently using water or polishing agents to avoid scratching.

For restoration clarity, follow with cerium oxide polishing if needed.

Application:

Spray coat 1: Thin, even layer.

Flash-off time: 5 minutes or until bubbling (outgassing) stops.

Spray coat 2 (optional for durability): After coat 1 flashes off.

Keep coating layer ultra-thin (6–8 microns).

Optional: Super-transparent tints for visual effect.

For Porcelain**Surface Prep:**

Clean thoroughly with detergent and rinse well.

For glazed porcelain: treat similarly to glass – acetone wipe + tack cloth.

For unglazed or matte porcelain: lightly sand with ultra-fine grit (2000 grit) to promote adhesion.

Application:

Spray coat 1: Thin, even layer.

Flash-off time: 5 minutes or until bubbling (outgassing) stops.

Spray coat 2 (optional for durability): After coat 1 flashes off.

Glazed porcelain behaves more like glass; unglazed variants benefit from extra surface prep.

Ensure porcelain is completely dry before coating, as micro-porosity can retain moisture.

For Stainless Steel**Surface Prep:**

Degrease thoroughly with acetone.

If surface is polished or glossy, lightly scuff it using an ultra-fine abrasive pad (e.g., Scotch-Brite gray or white) or 1000–2000 grit sandpaper.

Rub gently in a consistent direction along the grain of the metal to avoid swirl marks.

Wipe clean with acetone and tack cloth to remove all dust.

Application:

Spray coat 1: Thin, even layer.

Flash-off time: 5 minutes or until bubbling (outgassing) stops.

Spray coat 2 (optional for durability): After coat 1 flashes off.

Note: Can be tinted with transparent colors (champagne, smoke, bronze).

For Carbon Fibre and Tarpaulin**Surface Prep:**

Wipe with acetone.

Tack cloth dust removal.

Application:

Spray preferred to preserve carbon pattern.

Spray coat 1: Thin, even layer.

Flash-off time: 5 minutes or until bubbling (outgassing) stops.

Spray coat 2 (optional for durability): After coat 1 flashes off.

For Plastics (e.g. Polycarbonate, ABS)**Surface Prep:**

Clean thoroughly.

Light sanding may be required on some glossy plastics.

Acetone wipe (caution: avoid damaging sensitive plastics).

Application:

Wipe or spray on.

Allow flash time and cure as described.

For PCB's (Printed Circuit Boards)**Surface Prep:**

Ensure board is completely dry and dust-free.

Clean using alcohol or acetone carefully.

Application:

Spray with ultra-fine HVLP pattern to avoid bridging.

Use a fume hood or proper ventilation.

Notes: Dielectric strength ~20–24 kV/mm. High chemical and thermal resistance
Excellent for protective conformal coating.



Front Side - Transparent Color
Substrate - Carbon Fiber

COLORED CARBON

Backside - Solid Color



Front Side - Transparent Color
Substrate - ABS/PC/PVC

FAKE GLASS

The Leader in Durability

Did you know?

That our coatings are made of pure silica sand, which is the most common element on Earth?

Dealer

